



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 09/147,520 | 02/02/99 | LEIJON M | 9847-0004-6X |

MM71/0511
OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT
1755 JEFFERSON DAVIS HIGHWAY
FOURTH FLOOR
ARLINGTON VA 22202

| EXAMINER | |
|-----------|--------------|
| NGUYEN, C | |
| ART UNIT | PAPER NUMBER |
| 2831 | |

DATE MAILED: 05/11/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/147,320

Applicant(s)
Leijon et al.

Examiner
Chau Nguyen

Group Art Unit
2831

☒ Responsive to communication(s) filed on Feb 2, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 19-38 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 19-38 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 2831

DETAILED ACTION

Notice to the Preliminary Amendment

1. The requests to amend the specification in the preliminary amendment filed on Feb. 02, 1999 have not been entered because the pages and the lines as indicated cannot be found in the specification.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). The citizenship of the second joint inventor and the residence of the seventh joint inventor have been altered without initialing.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not provide written description to support for "a resistance per axial length unit of the outer conductive layer being in an inclusive range of 5

Art Unit: 2831

through 50000 ohm/m" (claim 23) or "of 500 through 25000 ohm/m" (claim 24) or "of 2500 through 5000 ohm/m" (claim 25). Also, the specification does not have support for "an adhesion between the insulating layer and the outer conductive layer being of a same order magnitude as an intrinsic strength of a material that forms said insulating layer" (claim 30).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 26, 27 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26, line 2, change "conductor" to --conductive layer--

line 3, change "a" to --said--.

Claim 30, lines 2-3, the phrase "an adhesion between... insulating layer" is unclear.

Claim 27 is included in this rejection because of dependency.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2831

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 19, 22-25, 31, 32, 34 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al.

Breitenbach et al. discloses an insulated conductor (fig. 2) comprising one or more strands (means for conducting, 5) an inner conductive layer (means for creating a first equipotential surface, semiconductive layer 7), an insulating layer (means for separating, 8), an outer conductive layer (means for creating a second equipotential surface, semiconductive layer 9), the outer conductive layer comprising a polymer and carbon black (means for setting a resistivity), and the insulating layer being made of EPR (col. 4, lines 46) (claim 34).

Breitenbach et al. does not disclose the outer conductive layer having a resistivity in an inclusive range of 10 through 500 ohm*cm (claims 19, 36&37) or of 50 through 100 ohm*cm (claim 22). Hvizd, Jr. et al. discloses an invention related to an insulated high-voltage cables.

Art Unit: 2831

Hvizd, Jr. et al. discloses that it is well-known in the high voltage cable art that semiconductive material having resistivities in the range of 1 to 1,000,000 ohm*cm (col. 2, line 65-67). It would have been obvious that depending on the specific use of the resulting wire, one skilled in the art would choose a suitable resistivity for the outer layer of Breitenbach et al. to meet the specific requirement since a resistivity having ranges of 10 through 500 ohm*cm or 50 through 100 ohm*cm are well-known in the cable art for semiconductive material as taught by Hvizd, Jr. et al.

The resistances as recited in claims 23-25 are inherent from the modified outer layer of Breitenbach et al. since the modified Breitenbach et al. outer layer has the resistivity as claimed in claim 19.

The method limitations, extruded (claim 31) or extrusion through a multilayer head (claim 32), do not contribute to the patentability of the product claims since it has been held that the patentability of a product does not depend on its method of production. In re Thorpe, 777 F2d, 695, 698, 227 USPQ 964, 966.

Re claims 36-38, Breitenbach et al. discloses that the insulated wire is used in an electric machine and for a high-voltage winding in an electric machine. Breitenbach et al. does not specifically disclose the insulated wire being used in a rotating electrical machine. However, it would have been obvious to one skilled in the art to use the modified insulated wire of Breitenbach et al. in a rotating electrical machine since the modified insulated wire of Breitenbach et al. is suitable for being used in high-voltage applications and using an insulated wire in a rotating electrical machine is well-known in the art.

Art Unit: 2831

8. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Elton et al.

The modified Breitenbach et al. insulated wires discloses the invention as claimed including the features of the outer conductive layer (semiconductive material) having a resistivity lower than that of the insulating layer (plastic) but higher than that of a material which comprises the one or more strands (metal) (claim 21). The modified Breitenbach et al. does not disclose the outer conductive layer being grounded at at least two different points. Elton et al. discloses an insulated wire (fig. 7) wherein the outer conductive layer (110) is grounded (at 112). It would have been obvious to one skilled in the art to ground the outer conductive layer of the modified Breitenbach et al. wire as taught by Elton et al. to establish and maintain the potential of the conductive layer. It would have been obvious to one skilled in the art to provide another grounding point on the outer conductive layer of the modified Breitenbach et al. wire to improve the grounding effect of the outer layer because it has been held that duplicating an essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

9. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Silver et al.

The modified Breitenbach et al. discloses an insulated wire as claimed including the feature of the outer conductive layer comprising a base polymer and a carbon black. The modified

Art Unit: 2831

Breitenbach et al. does not specifically disclose the resistivity of the outer conductive layer being set by a type of the base polymer, a type of the carbon black and a proportion of the carbon black relative to an entire formulation of the outer conductive layer. Silver et al. discloses an insulated wire comprising a conductive layer (3 or 4) being made of a base polymer and a carbon black. Silver et al. discloses the resistivity of the layer being set by a type of the base polymer (col. 4, lines 35-39), a type of the carbon black and a proportion of the carbon black relative to an entire formulation of the layer (col. 1, lines 20-37). It would have been obvious to one skilled in the art to choose suitable types of polymer and carbon black and use an appropriate amount of the carbon black as taught by Silver et al. to meet the specific required resistivity of the modified Breitenbach et al. outer layer.

10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. and Silver et al. as applied to claim 26 above, and further in view of Cloetens et al.

Claim 27 additionally recites the base polymer comprising an ethylene butyl acrylate copolymer. Cloetens et al. discloses an invention related to an electrical insulating composition comprising ethylene butyl acrylate as a base polymer (col. 3, line 43). It would have been obvious to one skilled in the art to use ethylene butyl acrylate as the base polymer of the modified Breitenbach et al. since ethylene butyl acrylate is a well-known electrical insulating polymer as taught by Cloetens et al.

Art Unit: 2831

11. Claims 28 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. as applied to claim 25 above, and further in view of Yamanouchi et al.

Claim 28 additionally recites the outer conductive layer being cross-linked by peroxide, and claim 33 additionally recites the insulating layer being a XLPE. Yamanouchi et al. discloses an invention related to a XLPE insulated cable comprising a cross-linking agent which is a peroxide (col. 1, line 19). It would have been obvious to one skilled in the art to use peroxide to cross-link the outer conductive layer of the modified Breitenbach et al. wire since peroxide has a relatively high cross-linking efficiency and suitable decomposition temperature as taught by Yamanouchi et al. (col. 1, lines 20-23). It would have been obvious to one skilled in the art to use XLPE for the insulating layer of Breitenbach et al. since XLPE is suitable for use in a high-voltage or super high-voltage cable as taught by Yamanouchi et al. (col. 1, lines 9-12).

12. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. and Silver et al. as applied to claim 26 above, and further in view of Yamanouchi et al.

Claim 29 additionally recites the outer conductive layer being cross-linked by peroxide. Yamanouchi et al. discloses an invention related to an insulated cable comprising a cross-linking agent which is a peroxide (col. 1, line 19). It would have been obvious to one skilled in the art to use peroxide to cross-link the outer conductive layer of the modified Breitenbach et al. wire since

Art Unit: 2831

peroxide has a relatively high cross-linking efficiency and suitable decomposition temperature as taught by Yamanouchi et al. (col. 1, lines 20-23).

13. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Olsson et al.

The modified Breitenbach et al. wire does not disclose an adhesion between the insulating layer and the outer conductive layer. Olsson et al. discloses an insulated wire wherein the insulating layer (3) is strongly bonded (adhered) to the outer conductive layer (4). It would have been obvious to one skilled in the art to provide a strong bond between the insulating layer and the outer conductive layer in the modified Breitenbach et al. wire to eliminate the risk of corona occurrence as taught by Olsson et al. (col. 3, lines 30-33).

14. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breitenbach et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Simmons et al.

Claim 35 additionally recites the insulating layer being made of LDPE, HDPE or PP. Simmons et al. discloses an extra high-voltage cable comprising an insulating layer (5) being made of HDPE or PP (col. 2, line 36). It would have been obvious to one skilled in the art to use HDPE or PP for the insulating layer of the modified Breitenbach et al. wire since HDPE or PP has a relatively high electric strength such that the thickness of the insulating layer can be significantly reduced as taught by Simmons et al. (col. 2, lines 40-44).

Cited Art

Art Unit: 2831

15.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Minnick et al., Hildreth and Britsch disclose cables having semiconductive layers.

Communication

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau Nguyen whose telephone number is (703) 308-0693.

Kristine Kincaid
Kristine Kincaid
Supervisory Patent Examiner
Technology Center 2800

CN

April 16, 1999